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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR    | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|---|-------------|-------------------------|---------------------|------------------|
| 10/736,283  | 12/15/2003  | Francois-Xavier Musalem | 1488/12/2           | 4294             |
| 25297   | 7590        | 09/16/2004              | EXAMINER            |                  |
| JENKINS & WILSON, PA<br>3100 TOWER BLVD<br>SUITE 1400<br>DURHAM, NC 27707 |             |                         | DICKEY, THOMAS L    |                  |
|   |             |                         | ART UNIT            | PAPER NUMBER     |
|   |             |                         | 2826                |                  |

DATE MAILED: 09/16/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                        |                     |  |
|------------------------------|------------------------|---------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b> | <b>Applicant(s)</b> |  |
|                              | 10/736,283             | MUSALEM ET AL.      |  |
|                              | <b>Examiner</b>        | <b>Art Unit</b>     |  |
|                              | Thomas L Dickey        | 2826                |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 23 June 2004.

2a) This action is FINAL.                    2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-6 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All    b) Some \* c) None of:

1. Certified copies of the priority documents have been received.
2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 06/23/2004.

4) Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other: \_\_\_\_\_.

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## **DETAILED ACTION**

### ***Oath/Declaration***

1. The oath/declaration filed on 05/14/2004 is acceptable.

### ***Drawings***

2. The drawings are objected to by the PTO Draftsperson for the reasons noted on the attached Notice of Draftsperson's Patent Drawing Review, form PTO-948.

### ***Priority***

3. Acknowledgement is made of applicant's claim for domestic priority under 35 U.S.C. 119(e), through provisional application 60/433,454 filed 12/13/2002.

### ***Information Disclosure Statement***

4. The Information Disclosure Statement filed on 06/23/2004 has been considered.

### ***Claim Objections***

5. Claim 2 is objected to because of the following informalities:

A. Applicant is advised that should claim 1 be found allowable, claim 6 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the

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same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

**B.** The phrase “a first portion of the movable component,” is used twice in the same claim, first on page 83 lines 1-2, next on page 83 line 8. Applicant appears to be referring to the same part both times, in which case the second reference to this part should be, “the first portion of the movable component.” If applicant intended to introduce a second “first portion” on line 8, applicant should have referred to the second “first portion” as “a second first portion,” or perhaps, more colloquially, “a third portion.”

Appropriate correction is required.

#### ***Claim Rejections - 35 USC § 102***

**6.** The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless --

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

**A.** Claims 1 and 6 are rejected under 35 U.S.C. 102(e) as being anticipated by DE LOS SANTOS (2004/0036132).

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de los Santos discloses a micro-electro-mechanical system (MEMS) variable capacitor, comprising (a) first 514 and second 518 actuation electrodes being spaced apart, and at least one 518 of the actuation electrodes being about vertically movable with respect to the other 514 actuation electrode when a voltage is applied across the first 514 and second 518 actuation electrodes; (b) a first capacitive electrode 512 attached to and electrically isolated from the first actuation electrode 514; and (c) a second capacitive electrode 516 attached to the second actuation electrode 518 and spaced from the first capacitive electrode 512 for movement of at least one 516 of the capacitive electrodes with respect to the other 512 capacitive electrode upon application of voltage across the first 514 and second 518 actuation electrodes to change the capacitance between the first 512 and second 516 capacitive electrodes. Note figure 5 and paragraphs 0044-0045 of de los Santos.

**B.** Claims 2-5 are rejected under 35 U.S.C. 102(b) as being anticipated by DEANE ET AL. (6,377,438).

With regard to claims 2-4 Deane et al. discloses a micro-electro-mechanical system (MEMS) variable capacitor, comprising (a) a movable component 26-30 comprising a first 26 and second 30 portions attached to a substrate 14-28, wherein the first 26 and second 30 portions are spaced vertically with respect to one another with respect to the substrate 14-28; (b) first 114 and second 104 actuation electrodes being spaced apart, wherein the first actuation electrode 114 is attached to the first portion 26 of the movable component 26-30, wherein the second actuation electrode 104 is attached to the

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substrate 28, wherein the first actuation electrode 114 is movable when a voltage is applied across the first 114 and second 104 actuation electrodes; (c) a first capacitive electrode 12 attached to the substrate 14; and (d) a second capacitive electrode 16 attached to second portion 30 of the movable component 26-30 and spaced from the first capacitive electrode 12 for movement of the first capacitive electrode 12 with respect to the second capacitive electrode 16 upon application of voltage across the first 114 and second 104 actuation electrodes to change the capacitance between the first 12 and second 16 capacitive electrodes, and wherein the movable component 26-30 moves vertically and rotationally with respect to the substrate 14-28.

With regard to claim 5 Deane et al. discloses a micro-electro-mechanical system (MEMS) variable capacitor, comprising (a) a substrate 14-28 comprising a first 28 and second 14 (substrate) portion attached to a movable component 26-30, wherein the first 28 and second 14 (substrate) portions are spaced vertically with respect to one another with respect to the movable component 26-30; (b) first 114 and second 104 actuation electrodes, wherein the first actuation electrode 114 is attached to the movable component 26, wherein the second actuation electrode 104 is attached to the first (substrate) portion 28 of the substrate 14-28, wherein the first actuation electrode 114 and movable component 26-30 are movable when a voltage is applied across the first 114 and second 104 actuation electrodes; (c) a first capacitive electrode 16 attached to the movable component 26-30; and (d) a second capacitive electrode 12 attached to the second (substrate) portion 14 of the substrate 14-28, wherein the movable component 26-30

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moves the first capacitive electrode 16 with respect to the second capacitive electrode 12 upon application of voltage across the first 114 and second 104 actuation electrodes to change the capacitance between the first 16 and second 12 capacitive electrodes.

Note figures 1-3, 4A-4D, column 3 line 67, column 4 lines 1-2, 30-39,59-61, and column 5 lines 30-66 of Deane et al.

### ***Conclusion***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thomas L Dickey whose telephone number is 571-272-1913. The examiner can normally be reached on Monday-Thursday 8-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan J Flynn can be reached on 571-272-1915. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

TLD  
09/04

*Minhloan Tran*  
**Minhloan Tran**  
**Primary Examiner**  
**Art Unit 2826**